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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/061,455	02/04/2002	Nicholas Ayache	017346-0173	8100

22428 7590 10/18/2006

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EXAMINER

STEVENS, THOMAS H

ART UNIT PAPER NUMBER

2123

DATE MAILED: 10/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/061,455	Applicant(s) AYACHE ET AL.	
	Examiner Thomas H. Stevens	Art Unit 2123	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 July 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1,3-11,13 and 14 is/are allowed.
- 6) ☐ Claim(s) 2 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. Claims 1-14 were examined.

#### ***Claim Objections***

2. The examiner has provided a number of claim deficiency examples, which could result to antecedent problems; however, the list of deficiencies may not be inclusive. Applicant should refer to these as examples of deficiencies and should initiate all necessary corrections to eliminate the claim objections.

- Claim 1, line 1, recites the limitation "the deformation", suggestion: "a deformation"
- Claim 1, line 6, recites "the position"; suggestion: "a position"
- Claim 1, line 6, recites "the vertices"; suggestion: "vertices"
- Claim 1, line 15, recites "the deviation"; suggestion: "a deviation"
- Claim 1, line 15 recites "the current length"; suggestion: "a current length"
- Claim 1, line 20, recites "the forces"; suggestion: "forces"
- Claim 1, line 20, recites "the composition"; suggestion: "composition"
- Claim 4, line 2, recites the limitation "the squares"; suggestion: "squares"

All claims have been treated on their merits.

#### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

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4. Claims 2 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
5. Claim 2 recites the limitation "the grid pattern" in line 2. There is insufficient antecedent basis for this limitation in the claim.

***Allowable Subject Matter***

6. Claims 1, 3-11, 13 and 14 are indicated as allowable over the prior art of record.
7. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).
8. Claims 2 and 12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.
9. The following is an examiner's statement of reasons for allowance:  
  
While Delingette teaches an apparatus for simulating the deformation of materials, particularly of soft body tissues, comprising: a memory configured to store, for at least one object having a three-dimensional shape: mechanical parameters of the material of the object data as to the position of the object recorded at the vertices of the at least one selected mesh, and force data which represents, in intensity and position, stress to be exerted on the object, and a computer operatively connected to the memory to evaluate new positions of the vertices, as a function of the stress exerted and the mechanical

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parameters of the material, wherein the computer comprises: the position of the vertex as a function of the composition of the forces exerted thereon data relating to at least one previous position of the vertex and mechanical parameters of the material; none of these references, taken either alone or in combination, with the prior art of record disclose

*(claim 1) "a first module (12, 14,16,18,20) configured to determine repeatedly, for each mesh, the deviation between the current length of an edge of the mesh of the mesh and its previous length and/or its length at rest, and to store respective force data relating to a potential energy of deformation for each vertex of the mesh, the respective force data being obtained from said deviation, and a second module (30,32,36) configured to determine repeatedly, for each vertex, new data"*

in combination with the remaining elements and features of the claimed invention. It is for these reasons that the applicants' invention defines over the prior art of record.

### ***Response to Arguments***

#### ***Drawings***

10. Objection is withdrawn.

#### ***112 2<sup>nd</sup> (Claim 13)/ 102(b)***

11. Rejections are withdrawn.

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***Correspondence Information***

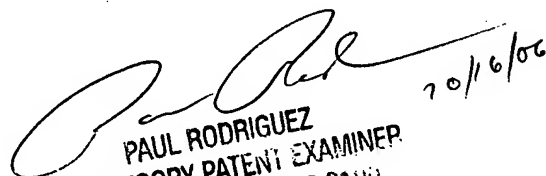
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mr. Tom Stevens whose telephone number is 571-272-3715, Monday-Friday (8:00 am- 4:30 pm EST).

If attempts to reach the examiner by telephone are unsuccessful, please contact examiner's supervisor Mr. Paul Rodriguez 571-272-3753. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>.. Answers to questions regarding access to the Private PAIR system, contact the Electronic Business Center (EBC) (toll-free (866-217-9197)).

October 5, 2006

TS

  
PAUL RODRIGUEZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100  
10/16/06